

NEW EGYPTIAN COMMUNITIES

by

Dr. Abou Zeid Rageh, Architect

I

Population

Much has been said on the population increase in Egypt. I would like to point here to three particular facts. Firstly, the population of Egypt has been increasing at an accelerated rate. It took almost a hundred years for the population to double; from 5 million in 1800 to 10 million in 1900. Each successive doubling of population took much less time than before, almost half the time of its previous one. From 1900 to 1950, the population doubled and reached 20 million. After 25 years, in 1975, it became 40 million, then soared up to 55 million in 1990. In other words, in less than two hundred years, the population has increased 11 times, from 5 million in 1800 to 55 million in 1990.

The rate of annual increase varies from 2.3 to 2.8 . Needless to say, increase in urban population has run at a higher rate; 4 % annually, mainly because of the continuous shift of the demographic structure of population from rural to urban, particularly during the last few decades.

Secondly, the increase in population was not coupled with an equivalent rate of economic growth. In case of Western Societies, increase in population went in parallel, and hand in hand, with social and economic development during the first industrial revolution in the nineteenth century and the first part of the twentieth century. With the second industrial revolution, in the twenties of this century, population became almost stable and reached what is called demographic equilibrium. Population growth in the West was organically and functionally linked with economic development and advancement in industry, technology and organizational capabilities.

This was not the case in Egypt. Economic growth was no match for population growth. Economy lags far behind increase in population. In my opinion this could be problem Number One facing Egypt at the present and in the near future. Demographers believe Egypt will reach her demographic equilibrium around year 2030. At that time population will reach 120 million, almost double the present population.

Thirdly, as we all know, the majority of Egyptians live in a valley of limited area. This represents only 4 % of the total area of the country, the rest of the population is found in the Sinai Peninsula, the Eastern Desert and the Western Desert , which are thinly populated. Pockets of small population are scattered in various oases and in small settlements along the coasts.

Both the Valley in the South and the Delta in the North are highly over-populated. Our population density is probably one of the highest in the world. We have lost a large portion of agricultural land - more than one million acres out of six million - to urban and rural growth, both formal and informal.

II

Egypt National and Regional Master Plan

Moving out of the present limited and heavily populated area in the Valley and the Delta to new corridors of development in the deserts and along the coasts will be the destiny of Egypt in the twenty first century. "New Horizons" and "New Frontiers" are goals needed for many Egyptian generations to come.

The present inhabited area is a narrow fertile valley flanked on both sides by vast arid deserts. The Valley extends from South to North in a linear form with gentle curves. At Cairo, it spreads widely in a fan-like shape forming the Nile Delta. Because of the linearity of the Valley, internal human movement was always one-dimensional: from South to North. External human movement, in form of migration or outside invasion took the opposite perpendicular direction : East-West.

From the dawn of history to this day, river agriculture has formed the life pattern of the Egyptians, both socially and economically. Human settlements evolved in two classical forms : villages and towns, the former for farming production and the latter for marketing and administration. Each kept its own style in planning and architecture. In the last few decades the two came closer to one another. Villages were urbanized as towns were ruralized. Overlapping of activities has changed their traditional character and identity.

The Nile Valley divides Egypt into two almost equal parts. The mountainous East Desert and Sinai on one side and the flat Western Desert on the other side. The Eastern Desert is rich in minerals and mining while the Western Desert has considerable potentialities for agriculture and industry. Both the North Coast on the Mediterranean and the East Coast on the Red Sea, have great touristic attractions. In simple terms Egypt's geography consists of three great parallel stretches; the Eastern Desert on the East, the Western Desert on the West, with the Nile Valley and the Delta in the middle.

Before any national master plan may materialize, resources and potentialities of each geographical region should be studied. The regional study will include the following:

- Natural resources including raw materials, minerals, water and energy
- Local climate, environment, topography and possible use of wind and heat in generating energy and use of rain and underground water reservoirs for agriculture
- Defining corridors of development based on possible natural resources to sustain human settlements
- Infra structure including transportation on International, National and Local levels.
- Life pattern suitable for existing natural resources, human potentialities and appropriate technology to be used in industry and agriculture.
- Planning system, building materials and architectural character of human settlements including their sizes and functional and operational relationship.

A recent preliminary study has revealed that possible regions for development outside the existing valley are:

- * Red Sea Coast Region for touristic activities
- * Eastern Desert Region for mining and industry
- * New Valley in the Western Desert, from Toshky in the South to Sewa in the north passing through all the oases in that region. This corridor - sometimes called the Great Green Western Belt - has considerable potentialities in agriculture, mining and industry
- * Sinai and Suez Canal Region for mining, industry, agriculture and tourism.
- * Northern Coast Region on the Mediterranean Sea for tourism and agriculture.
- * Nasser Lake Region in the South for agriculture, fishing and tourism.

Because of their differences in ecology and resources each of these proposed regions will have its own particular development system, planning pattern and architectural character. We generally overlook this fact and tend to copy planning concepts and architectural forms from the old valley and plant them in new communities, which have a totally different environment.

Preparing a National Master Plan requires, in the first place, combined effort of all concerned agencies; governmental, private and academic. National plans, on the sectorial level of transportation, irrigation, land reclamation, energy and tourism are now available. They are not yet knitted together in a single master plan. Ministry of Planning and General Organization for Urban Planning could be a possible coordinator for such a National Master Plan.

New communities should be an integral part of a National Plan. They should not be thought of as separate from national strategy and policy. Their location, size and economic base must fit in a total picture of national development.

III

Egypt's Program of New Communities

The General Organization of New Urban Communities was established by Law No. 59, 1979 to be the official body responsible for choosing sites, building and administering new communities in accordance to national planning and strategies. In 1981 the responsibility of this Organization was extended to cover the entire desert areas outside the existing city limits except those areas allocated for national security and land reclamation projects. Seven new cities, representing the first generation, soon started : Tenth of Ramadan, Sadat, Sixth of October, Borg El-Arab, Fifteenth of May, New Damietta and New Salhya. The following is a brief account of each of these cities.

Tenth of Ramadan

- Located on Cairo-Ismailia desert road, 55 Km from Cairo and 30 Km east of the Delta.
- Target population 500,000 inhabitants
- Total city built area about 93 Km²

- Land uses are distributed as follows

. Residential	20.4 Km2	22 % of total built area
. Commercial and services	14 Km2	15 % of total built area
. Industrial	23 Km2	25.2% of total built area
. Tourism	1.9 Km2	2 % of total built area
. Green areas	13.5 Km2	14.5% of total built area
. Roads	19.8 Km2	21.3% of total built area
- Gross population density 35 person per acre
- Economic base : Industry
- Construction Status on June 1997
 - . No. of existing factories 785
 - . No. of factories under construction 316
 - . No. of existing housing units 26812
 - . No. of housing units under construction 6653
 - . No. of existing population 120,000
 - . No. of laborers in industry and services 110467

Sadat City

Located on Cairo-Alexandria desert road, 93 Km north of Cairo and 37 Km west of the Delta

- Target population 500,000 inhabitants
- Total city built area about 63.43 Km2
- Land uses are distributed as follows

. Residential	12.58 Km2	19 % of total built area
. Commercial and services	13.61 Km2	21 % of total built area
. Industrial	18.46 Km2	28 % of total built area
. Tourism	1.4 Km2	2.3% of total built area
. Green areas	3.75 Km2	5.7% of total built area
. Roads	15.6 Km2	24 % of total built area
- Gross population density 27.5 person per acre
- Economic base : Industry
- Construction status on June 1997
 - . No. of existing factories 137
 - . No. of factories under construction 109
 - . No. of existing housing units 1954
 - . No. of housing unit under construction 2808
 - . No. of existing population 40000
 - . No. of laborers in industry and services 10816

Sixth of October City

Located in Giza Area, west of Greater Cairo and 38 Km from city center. The city is close to the Cairo-Alexandria road and the Cairo-Fayoum road.

- Target population 500,000 inhabitants
- Total city built area 153.2 Km2
- Land uses are distributed as follows:

. Residential	11.4 Km2	7.4% of total built area
. Commercial and services	36.7 Km2	24 % of total built area
. Industrial	18.4 Km2	12 % of total built area

- | | | |
|---------------|----------|---------------------------|
| . Tourism | 52.3 Km2 | 34.2% of total built area |
| . Green areas | 12.2 Km2 | 12 % of total built area |
| . Roads | 22.2 Km2 | 14.5% of total built area |
- Gross population density 24 person per acre
 - Economic base: Industry and tourism
 - Construction status on June 1997
 - . No. of existing factories 529
 - . No. of factories under construction 323
 - . No. of existing housing units 20640
 - . No. of housing units under construction 10752
 - . No. of existing population 140,000
 - . No. of laborers in industry and services 57,184

Borg El-Arab City

Located 60 Km west of Alexandria and 7 Km south of the Mediterranean Sea.

- Target population 510,000 inhabitants.
- Total city built area 63.2 Km2
- Land uses are distributed as follows:

. Residential	14.5 Km2	23% of total built area
. Commercial and services	5.7 Km2	9 % of total built area
. Industrial	17 Km2	27% of total built area
. Tourism	0.5 Km2	1 % of total built area
. Green areas	10 Km2	15% of total built area
. Roads	15.5 Km2	25% of total built area
- Gross population density 34 person per acre
- Economic base : Industry and commerce
- Construction status on June 1997
 - . No. of existing factories 279
 - . No. of factories under construction 118
 - . No. of existing housing units 7165
 - . No. of housing units under construction 1512
 - . No. of existing population 75,000
 - . No. of laborers in industry and services 17632

Fifteenth of May City

- Located 35 Km south of Cairo and south-east of Helwan

- Target population 250,000 inhabitants
- Total city built area 12.8 Km2
- Land uses are distributed as follows:

. Residential	1.5 Km2	12% of total built area
. Commercial and services	2 Km2	15% of total built area
. Green areas	5.8 Km2	45% of total built area
. Roads	3.5 Km2	27% of total built area
- Gross population density 82 person per acre
- Construction status on June 1997
 - . No. of existing housing units 25036
 - . No. of housing units under construction 3242

- . No. of existing population 180,000
- . No. of laborers in services and administration 27,177

New Damietta City

- Located on the Mediterranean coast, 4.5 Km west of Damietta
- Target population 270,000 inhabitants
- Total city built area 27.3 Km²
- Land uses are distributed as follows:

. Residential	6.5 Km ²	24 % of total built area
. Commercial and services	2.1 Km ²	7.8% of total built area
. Industry	2.3 Km ²	8.6% of total built area
. Tourism	3 Km ²	10.3% of total built area
. Green areas	6.4 Km ²	24 % of total built area
. Roads	7 Km ²	25.3% of total built area
- Gross population density 42 person per acre
- Construction status on June 1997
 - . No. of existing factories 91
 - . No. of factories under construction 79
 - . No. of existing housing units 7954
 - . No. of housing units under construction 2660
 - . No. of existing population 50,000
 - . No. of laborers in industry and services 3396

New Salhya City

- Located 100 Km from Cairo, 65 Km from Zagazig, 6 Km north of Ismailia Canal on Kassasin road
- Target population 50,000 inhabitants
- Total city built area 4.31 Km²
- Land uses are distributed as follows:

. Residential	0.97 Km ²	22.6% of total built area
. Commercial and services	0.43 Km ²	10.0% of total built area
. Industrial	0.92 Km ²	21.4% of total built area
. Green areas	0.82 Km ²	19.0% of total built area
. Roads	1.163 Km ²	27.0% of total built area
- Construction status on June 1996
 - . No. of existing factories 22
 - . No. of factories under construction 30
 - . No. of existing housing units 3474
 - . No. of housing units under construction 503

After the first generation of new cities were initiated and went under construction, the Organization of New Communities started planning and building the second generation: El-Obour, Badr, New Beni-Suef, New Minya, El-Shorouk and El-Sheikh Zayed . The following is a brief account of each of these new cities.

El-Obour City

- Located 30 Km north-east of Cairo. The site is fringed by Cairo-Bilbis road to the east and Cairo-Ismailia road to the south.
- Target population 500,000 inhabitants
- Total city built area 50 Km²
- Land uses are distributed as follows:

. Residential	19.4 Km ²	38.6% of total built area
. Commercial and services	3.5 Km ²	7 % of total built area
. Industrial	7.3 Km ²	14% of total built area
. Recreational and open spaces	20.16Km ²	40% of total built area

Badr City

- Located on Cairo-Suez desert road, 47 Km from Cairo
- Target population 332,000 inhabitants
- Total city built area 23.9 Km²

New Beni-Suef City

- Located across the Nile east of Beni-Suef and connected to the mother city with a bridge
- Target population 90,000 inhabitants
- Total city built area 22 Km²

New Minya City

- Located across the Nile east of Minya and connected to the mother city with a bridge.
- Target population 120,000 inhabitants.

El-Shorouk City

- Located 37 Km from Cairo on Cairo-Ismailia desert road
- Target population 250,000 inhabitants
- Total city built area 18.9 Km²

El-Sheikh Zayed City

- Located 38 Km from the center of Cairo on Cairo-Alexandria road.
- Target population 430,000 inhabitants
- Total city built area 13.18 Km²

IV

Evaluating the New Communities Program

Location of New Towns

Sites of new towns were chosen close to inhabited areas and on main highways. Tenth of Ramadan is located midway between Cairo and Ismailia and east of the Delta, while Sadat City is on the other side of the Delta, on a highway connecting Cairo and Alexandria. Sixth of October City is close to both the Cairo-Alexandria road and the Cairo El-Fayoum road. New Beni-Suef and New Menya were built on the opposite

side of the Nile with bridges connecting them to the old towns.

The proximity of new towns to old communities has two major advantages. First, new towns are connected to the national highway network and thus they have direct and easy access to other inhabited regions and also to major seaports and airports. Second, the old communities can give back-up services and manpower in the early phases of the new towns. At later phases, new towns could become independent and self-supporting. Gradual expansion of development from existing inhabited areas to new adjacent frontiers was the strategy behind the locations of new towns. This policy proved to be much more economical than building new settlements in remote locations where labor and services would not be easily available.

Size of New Towns

The target population of the first generation of new towns was quite large. Tenth of Ramadan City, Sadat City, and Sixth of October City and New Borg El-Arab will have each 500,000 inhabitants as target population when they are completed. New cities of the second generation such as Badr and El-Shorouk will have each 330,000 as their target population. Each of the first group will be equal in size to capitals of existing governorates, as Tanta, Demenhour, Zagazig and Asyout. New Towns of the second group will be equal to medium Egyptian towns, as El-Mehalla and Menouf.

It is clear that the program of New Settlements is directed towards building larger new cities. Some planners question the validity of that policy. Large new towns require heavy investment in infra-structure network, housing and services especially at the first stages of construction. It takes a long time and considerable efforts and investments before these towns reach the take-off point and become self sustained. Smaller communities would be much easier to plan, build, maintain and run. Also, the rate of development could be much faster in smaller communities than in the larger ones. In other countries as England and France, new towns never exceeded 250,000 residents.

Existing Population in New Towns

Most of the new cities suffer from low occupancy rate. It is found that the number of city residents falls far behind the initial program. 24% of the expected number of residents now live in Tenth of Ramadan. In Sadat City 8%, in Sixth of October 28%, in Borg El-Arab 15%,

and in New Damietta 18%. Only 31% of the existing housing units are occupied and the rest are vacant. Considerable volume of housing stock, as well as existing infra structure and services, are left unused in our new communities.

A recent study has shown that 8% of the labor force in a new town live in that town and the rest stay in their original cities and villages. They commute every day by public transportation or by private buses between their home and work. Because of their low wages, 40% of them hold a second job back in their home towns and villages. The majority cannot afford either to buy or rent a housing unit near their work in the new communities. The study has also shown that the reason behind the people's reluctance to move to new towns are as follows:

- Only some basic services are provided but general and central services as health centers, specialized hospitals, colleges, technical schools, shopping malls, sports clubs and entertainment facilities are lacking
- High cost of housing, domestic supplies and high cost of living in general

- Poor local transportation system
- Inefficiency of governmental and social services and municipal services such as electricity , potable water and garbage collecting.

Industry in New Towns

Industry has definitely bypassed the original program. The number of factories that have come into operation, the number of laborers employed and the total annual industrial production have all exceeded expectation.

In the first generation of New Towns 1828 factories have been built. Their total invested capital equals L.E. 11.6 billion, their annual production L.E.18.8 billion and the number of laborers employed reaches 188,725. 990 new factories are now under construction and they will create 64,852 new jobs.

The new towns have a wide variety of industries. They could be arranged in terms of production volume as follows:

- Pharmacology and chemical industry 27%
- Electrical and metallic industry 22%
- Garment and textile industry 20%
- Building materials industry 15%
- Food industry 8%
- Wood industry 5%
- Others 3%

New Towns industry is generally a capital intensive, rather than a labor intensive industry. The average number of workers per factory is 77.2 and the average monthly wage is L.E.240.77

New Towns Administration

New Towns are run by official bodies appointed by the Minister of Housing and New Communities. The general administrative and financial laws and regulations are applied to the new communities. In such a system development of new towns is tied to governmental bureaucracy. With centralized control, townships lack freedom of action. Decision making and implementation of policies generally takes longer than necessary. A new system of more dynamic administration must be thought of. New Towns should have more authority to run their own affairs. They should have their own resources and choose their priorities. Local communities should participate in their own local government. In such a system it is advisable to have a marketing agency in each town with full information on potentialities and investment possibilities of the area.

Financing structure of New Towns

In building infra structure, housing and social services as schools and hospitals, new towns depend heavily on banking loans. 87.4% of the invested capital comes from loans and only 12.6% from their own resources. Through the years loans and their interests have mounted up and the Organization of New Communities is now facing difficulties in paying its debts. The whole financing system has to be restructured. The government role should be reduced while that of private enterprizes and developers has to be maximized. New Towns have to be less dependent on government and become self supporting.

V

Building Industry and New Towns

Building industry is rated number four in terms of production volume among different industrial products in new towns. This successful industry meets the growing need of the Egyptian market and also some foreign markets abroad. Building industry at large contributes to a great extent to national economic growth.

Building materials industry includes such items as steel reinforcement, brick, pipes, gypsum boards, glass, paints, ceramics, windows, doors, partitioning, suspended ceilings, insulating materials, sanitary fixtures and electric fixtures. These products have improved considerably the architectural and engineering quality in Egypt.

As mentioned before future communities will be built in either desert or coastal regions. Building systems and buildings materials used in each region should be in tune with the ecological and environmental realities of that region. In desert regions, for example, buildings should be heat insulated and energy efficient. Simple construction techniques are preferable in these remote areas.

Local building materials should be explored. Their location, availability, physical and chemical properties should be studied. Through research, the possibility of producing these materials on a commercial basis could be tested. Using local materials always helps in reducing cost of construction.

VI

Future of New Towns

Based on the previous survey we can conclude the following:

- 1 - Egypt has an ambitious program of building new towns probably for a hundred years to come. Almost the same number of the present population will live in totally new communities in the foreseen future.
- 2 - A national and regional master plan should be prepared. New communities must be located according to this master plan.
- 3 - Size, planning pattern and architecture character of new communities should be based on ecological and environmental characteristics, and natural and human resources available in the region.
- 4 - A new city government system should be applied to allow more decentralization, self reliance and dynamicizm in administration.
- 5 - Private developers, and not the government, should take the lead in developing new communities.
- 6 - Local building materials should be used to reduce construction cost. Buildings should be in tune with their local environmental and ecological conditions.